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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/407,594	09/28/1999	GARY M. KING	PO9-99-147	2954

7590 12/11/2003

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EXAMINER

PHAM, THOMAS K

ART UNIT	PAPER NUMBER
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2121

DATE MAILED: 12/11/2003

13

Please find below and/or attached an Office communication concerning this application or proceeding.

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Office Action Summary

Application No.

09/407,594

Applicant(s)

KING ET AL.

Examiner

Thomas K Pham

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 25 November 2003.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-4, 6-14, 16-25 and 27-31 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☒ Claim(s) 8, 9, 18, 19, 29 and 30 is/are allowed.
- 6) ☒ Claim(s) 1-4, 6-7, 10-14, 16-17, 20-25, 27-28 and 31 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 03 January 2000 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. §§ 119 and 120

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
 - ☐ Certified copies of the priority documents have been received in Application No. _____.
 - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.
- 13) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application) since a specific reference was included in the first sentence of the specification or in an Application Data Sheet. 37 CFR 1.78.
- a) ☐ The translation of the foreign language provisional application has been received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121 since a specific reference was included in the first sentence of the specification or in an Application Data Sheet. 37 CFR 1.78.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449) Paper No(s) _____
- 4) ☐ Interview Summary (PTO-413) Paper No(s). _____
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: _____

Response to Arguments

1. Applicant's request for reconsideration of the finality of the rejection of the last Office action is persuasive and, therefore, the finality of that action is withdrawn.
2. Applicant's arguments with respect to claims 1-4, 6-7, 10-14, 16-17, 20-25, 27-28 and 31 have been considered but are moot in view of the new ground(s) of rejection.
3. Claims 8-9, 18-19 and 29-30 are remained allowable over prior record.

Claim Rejections - 35 USC § 103

4. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

5. Claims 1-4, 11-14 and 21-25 are rejected under 35 U.S.C. 103(a) as being unpatentable over Ellsworth et al. U.S. Patent No. 6,453,344 (hereinafter Ellsworth) in view of Zalewski et al. U.S. Patent No. 6,260,068 (hereinafter Zalewski).

Regarding claim 1

Ellsworth shows a method of managing logical processors of a computing environment, said method comprising: configuring a logical partition of said computing environment with one or more logical processors (col. 6 lines 1-5, "the user of the ... I/O Configuration"); dynamically adjusting the configuration (col. 5 lines 1-7, "Dynamic CPU ... unwanted downtime") but does not show the automatically determining based on workload of the logical partition that said configuration is to be adjusted. However, Zalewski teaches the dynamic reconfiguration of a

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multi-processor computer system without intervention of the system administrator (col. 4 lines 50-53, "In accordance with ... of the system administrator"). Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to incorporate the automatic configuration of Zalewski with the system of Ellsworth because it would provide for determining the status of resources automatically in order to adjust the system configuration without system administrator intervention.

Regarding claim 2

Ellsworth shows the method of claim 1, wherein said dynamically adjusting is in response to workload of said logical partition (col. 5 lines 15-22, "the multiprocessor system ... the server pool").

Regarding claim 3

Ellsworth shows the method of claim 1, wherein said dynamically adjusting comprises increasing a number of logical processors allocated to said logical partition (col. 5 lines 24-31, "the multiprocessor ... a pool as server 2-4").

Regarding claim 4

Ellsworth shows the method of claim 1, wherein said dynamically adjusting comprises decreasing a number of logical processors allocated to said logical partition (col. 6 lines 50-54, "the logical processor ... remains shared").

Regarding claim 11

Ellsworth shows a system of managing logical processors of a computing environment, said system comprising: means for configuring a logical partition of said computing environment with one or more logical processors (col. 6 lines 1-5); and means for dynamically adjusting the

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configuration (col. 5 lines 1-7) but does not teach automatically determining based on workload of the logical partition that said configuration is to be adjusted. However, Zalewski teaches the dynamic reconfiguration of a multi-processor computer system without intervention of the system administrator (col. 4 lines 50-53, "In accordance with ... of the system administrator"). Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to incorporate the automatic configuration of Zalewski with the system of Ellsworth because it would provide for determining the status of resources automatically in order to adjust the system configuration without system administrator intervention.

Regarding claim 12

Ellsworth shows the system of claim 11, wherein said means for dynamically adjusting is in response to workload of said logical partition (col. 5 lines 15-23).

Regarding claim 13

Ellsworth shows the system of claim 11, wherein said means for dynamically adjusting comprises means for increasing a number of logical processors allocated to said logical partition (col. 5 lines 24-31).

Regarding claim 14

Ellsworth shows the system of claim 11, wherein said means for dynamically adjusting comprises means for decreasing a number of logical processors allocated to said logical partition (col. 6 lines 50-54).

Regarding claim 21

Ellsworth shows a system of managing logical processors of a computing environment, said system comprising: a processor adapted to configure a logical partition of said computing

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environment with one or more logical processors (col. 6 lines 1-5); dynamically adjust the configuration (col. 5 lines 1-7) but does not teach one or more processors adapted to automatically determine based on workload of the logical partition that a configuration of the logical partition having one or more logical processors is to be adjusted. However, Zalewski teaches the dynamic reconfiguration of a multi-processor computer system without intervention of the system administrator (col. 4 lines 50-53, "In accordance with ... of the system administrator"). Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to incorporate the automatic configuration of Zalewski with the system of Ellsworth because it would provide for determining the status of resources automatically in order to adjust the system configuration without system administrator intervention.

Regarding claim 22

Ellsworth shows at least one program storage device readable by a machine, tangibly embodying at least one program of instructions executable by the machine to perform a method of managing logical processors of a computing environment, said method comprising: configuring a logical partition of said computing environment with one or more logical processors (col. 5 lines 1-7); dynamically adjusting the configuration (col. 5 lines 1-7) but does not teach automatically determining based on workload of the logical partition that said configuration is to be adjusted. However, Zalewski teaches the dynamic reconfiguration of a multi-processor computer system without intervention of the system administrator (col. 4 lines 50-53, "In accordance with ... of the system administrator"). Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to incorporate the automatic configuration of Zalewski

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with the system of Ellsworth because it would provide for determining the status of resources automatically in order to adjust the system configuration without system administrator intervention.

Regarding claim 23

Ellsworth shows the at least one program storage device of claim 22, wherein said dynamically adjusting is in response to workload of said logical partition (col. 5 lines 15-23).

Regarding claim 24

Ellsworth shows the at least one program storage device of claim 22, wherein said dynamically adjusting comprises increasing a number of logical processors allocated to said logical partition (col. 5 lines 24-31).

Regarding claim 25

Ellsworth shows the at least one program storage device of claim 22, wherein said dynamically adjusting comprises decreasing a number of logical processors allocated to said logical partition (col. 6 lines 50-54).

6. Claims 6-7, 10, 16-17, 20, 27-28 and 31 are rejected under 35 U.S.C. 103(a) as being unpatentable over Ellsworth in view of Zalewski and further in view of George et al. U.S. Patent No. 5,659,786 (hereinafter George).

Regarding claim 6

7. As for claim 6, Ellsworth and Zalewski teach the method of claim 5 with automatic determination of CPU reconfiguration but do not specifically show the determination is performed at a plurality of time intervals. However, George shows the determination is

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performed at a plurality of time intervals (col. 3 lines 54-58). It would have been obvious to one of ordinary skill in the art at the time the invention was made to combine George with Ellsworth and Zalewski because it would provide for periodically running the algorithm of determining reconfiguration logical processors in order to obtain the best performance based on the different loads at different time interval.

Regarding claim 7

8. As for claim 7, Ellsworth and Zalewski teach the method of claim 5 with automatic determination of CPU reconfiguration but do not specifically show the method comprises using a predefined equation in making the determination. However, Ellsworth shows the algorithm steps for dynamic CPU configuration (col. 7 line 42-44). It would be obvious to one of ordinary skill in the art at the time the invention was made to know that there is at least one predefined equation involved as part of the algorithm presented by Ellsworth in order to calculate the number of logical processors based on the number of physical CPUs and the offline/online processors currently exist in the system.

Regarding claim 10

9. As for claim 10, Ellsworth and Zalewski teach the method of claim 7 with automatic determination of CPU reconfiguration but do not specifically show the method further comprises comparing a result of said predefined equation with one or more thresholds to determine whether the adjustment is to be made. However, George shows the method further comprises comparing the reconfiguration action with the reconfiguration policy to make sure it within one or more thresholds that will not violate the predefined policy (col. 7 lines 1-17). It would have obvious to one of ordinary skill in the art at the time the invention was made to combine George with

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Ellsworth and Zalewski because it would provide for setting a limit to the determination process of when a reconfiguration of logical processors should take place in order to gain the benefit of better system performance.

Regarding claim 16

10. As for claim 16, Ellsworth and Zalewski teach the system of claim 15 with automatic determination of CPU reconfiguration but do not specifically show the system is performed at a plurality of time intervals. However, George shows the system is performed at a plurality of time intervals (col. 3 lines 54-58). It would have been obvious to one of ordinary skill in the art at the time the invention was made to combine George with Ellsworth and Zalewski because it would provide for periodically running the algorithm of determining reconfiguration logical processors in order to obtain the best performance based on the different loads at different time interval.

Regarding claim 17

11. As for claim 17, Ellsworth and Zalewski teach the system of claim 15 with automatic determination of CPU reconfiguration but do not specifically show the system comprises means for using a predefined equation in making the determination. However, Ellsworth shows the algorithm steps for dynamic CPU configuration (col. 7 line 42-44). It would be obvious to one of ordinary skill in the art at the time the invention was made to know that there is at least one predefined equation involved as part of the algorithm presented by Ellsworth in order to calculate the number of logical processors based on the number of physical CPUs and the offline/online processors currently exist in the system.

Regarding claim 20

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12. As for claim 20, Ellsworth and Zalewski teach the system of claim 17 with automatic determination of CPU reconfiguration but do not specifically show the system further comprises means for comparing a result of said predefined equation with one or more thresholds to determine whether the adjustment is to be made. However, George shows the system comprises comparing the reconfiguration action with the reconfiguration policy to make sure it within one or more thresholds that will not violate the predefined policy (col. 7 lines 1-17). It would have obvious to one of ordinary skill in the art at the time the invention was made to combine George with Ellsworth and Zalewski because it would provide for setting a limit to the determination process of when a reconfiguration of logical processors should take place in order to gain the benefit of better system performance.

Regarding claim 27

13. As for claim 27, Ellsworth and Zalewski teach the at least one program storage device of claim 26 with automatic determination of CPU reconfiguration but do not specifically show the determination is performed at a plurality of time intervals. However, George shows the determination of CPU reconfiguration is performed at a plurality of time intervals (col. 3 lines 54-58). It would have been obvious to one of ordinary skill in the art at the time the invention was made to combine George with Ellsworth and Zalewski because it would provide for periodically running the algorithm of determining reconfiguration logical processors in order to obtain the best performance based on the different loads at different time interval.

Regarding claim 28

14. As for claim 28, Ellsworth and Zalewski teach the at least one program storage device of claim 26 with automatic determination of CPU reconfiguration but do not specifically show the

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determination comprises using a predefined equation in making the determination. However, Ellsworth shows the algorithm steps for dynamic CPU configuration (col. 7 line 42-44). It would be obvious to one of ordinary skill in the art at the time the invention was made to know that there is at least one predefined equation involved as part of the algorithm presented by Ellsworth in order to calculate the number of logical processors based on the number of physical CPUs and the offline/online processors currently exist in the system.

Regarding claim 31

As for claim 31, Ellsworth and Zalewski teach the at least one program storage device of claim 28 with automatic determination of CPU reconfiguration but do not specifically show the determination further comprises comparing a result of said predefined equation with one or more thresholds to determine whether the adjustment is to be made. However, George shows the determination further comprises comparing a result of said predefined equation with one or more thresholds to determine whether the adjustment is to be made (col. 7 lines 1-17). It would have obvious to one of ordinary skill in the art at the time the invention was made to combine George with Ellsworth and Zalewski because it would provide for setting a limit to the determination process of when a reconfiguration of logical processors should take place in order to gain the benefit of better system performance.

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Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to examiner *Thomas Pham*; whose telephone number is (703) 305-7587 and fax number is (703) 746-8874, Monday-Thursday and every other Friday from 7:30AM- 5:00PM EST or contact Supervisor *Mr. Anil Khatri* at (703) 305-0282.

Any response to this office action should be mailed to: **Director of Patents and Trademarks Washington, D.C. 20231**, or **Hand-delivered** responses should be brought to **Crystal Park II, 2121 Crystal Drive Arlington, Virginia, (Receptionist located on the 4th floor)**, or fax to the **official fax number (703) 872- 9306**.

Any inquiry of a general nature or relating to the status of this application should be directed to the Group receptionist whose telephone number is (703) 305-3900.

Thomas Pham
Patent Examiner

TP

December 4, 2003



ANIL KHATRI
SUPERVISORY PATENT EXAMINER